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mechanical polishing, characterized in that the polishing step comprises a first polishing step of polishing the surface such that the interconnect metal film partially remains on the surface other than the concave and a second polishing step of polishing the surface using a polishing slurry controlling a polishing-rate ratio of the interconnect metal to the barrier metal of 1 to 3 inclusive, until the surface of the insulating film other than the concave is substantially completely exposed, wherein the first polishing step is conducted such that the interconnect metal film remains in 5% to 30% inclusive of the surface area other than the concave.

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3. (Amended) A process for forming a metal interconnect comprising the steps of forming a concave in an insulating film formed on a substrate, forming a barrier metal film on the insulating film, forming an interconnect metal film over the whole surface such that the concave is filled with the metal and then polishing the surface of the substrate by chemical mechanical polishing, characterized in that the polishing step comprises a first polishing step of polishing the surface such that the interconnect metal film partially remains on the surface other than the concave and a second polishing step of polishing the surface using a polishing slurry controlling a polishing-rate ratio of the interconnect metal to the barrier metal of 1 to 3 inclusive, until the surface of the insulating film other than the concave is substantially completely exposed, wherein in the first polishing step, the polishing slurry comprises a polishing material, an oxidizing agent, an organic acid and an alkanolamine represented by general formula (1):



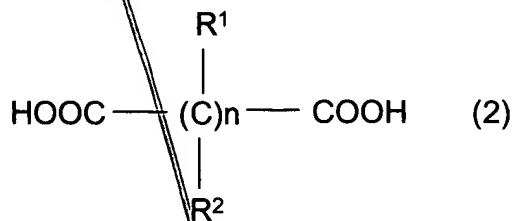
wherein R^1 is hydrogen or alkyl having 1 to 5 carbon atoms; R^2 is alkylene having 1 to 5 carbon atoms; m is an integer of 0 to 2 inclusive; and n is a natural number of 1 to 3 inclusive, provided that $m+n$ is 3.

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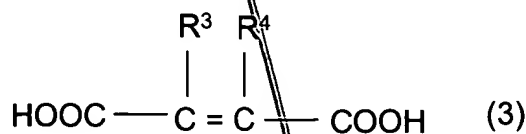
5. (Amended) The process for forming a metal interconnect as claimed in Claim 1, wherein the polishing slurry used in the second polishing step controls a polishing rate ratio of the insulating film to the barrier metal of 0.01 to 0.5 inclusive.

6. (Amended) A process for forming a metal interconnect comprising the steps of forming a concave in an insulating film formed on a substrate, forming a barrier metal film on the insulating film, forming an interconnect metal film over the whole surface such that the concave is filled with the metal and then polishing the surface of the substrate by chemical mechanical polishing, characterized in that the polishing step comprises a first polishing step of polishing the surface such that the interconnect metal film partially remains on the surface other than the concave and a second polishing step of polishing the surface using a polishing slurry controlling a polishing-rate ratio of the interconnect metal to the barrier metal of 1 to 3 inclusive, until the surface of the insulating film other than the concave is substantially completely exposed, wherein the polishing slurry used in the second polishing step comprises a silica polishing material and a carboxylic acid represented by general formula (2):

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wherein n is 0, 1, 2 or 3 and each of R¹ and R² is, independently for a carbon atom to which it attaches, hydrogen, -OH or -COOH; or general formula (3):



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where each of R³ and R⁴ is independently hydrogen or -OH.

9. (Amended) A process for forming a metal interconnect comprising the steps of forming a concave in an insulating film formed on a substrate, forming a barrier metal film on the insulating film, forming an interconnect metal film over the whole surface such that the concave is filled with the metal and then polishing the surface of the substrate by the chemical mechanical polishing, characterized in that the polishing step comprises a first polishing step of polishing the surface such that the interconnect metal film partially remains on the surface other than the concave and a second polishing step of polishing the surface using a polishing slurry controlling a polishing-rate ratio of the interconnect metal to the barrier metal of 1 to 3 inclusive, until the surface of the insulating film other than the concave is substantially completely exposed, wherein the polishing slurry used in the second polishing step comprises a silica polishing material and an inorganic salt, and wherein the inorganic salt in the polishing slurry used in polishing is at least one selected from the group consisting of a hydroacid salt, an oxo acid salt, a peroxo acid salt and a halogen oxo acid salt.

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12. (Twice Amended) The process for forming a metal interconnect as claimed in Claim 1 wherein the barrier metal film is a tantalum-containing metal film and the interconnect metal film is a copper or copper alloy film.

Please add Claims 33-40 as follows:

B6 (C1)
- -33. (New) The process of forming a metal interconnect as claimed in Claim 6, wherein the polishing slurry used in the second polishing step controls a polishing rate ratio of the insulating film to the barrier metal of 0.01 to 0.5, inclusive.